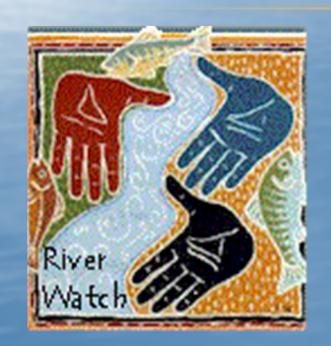
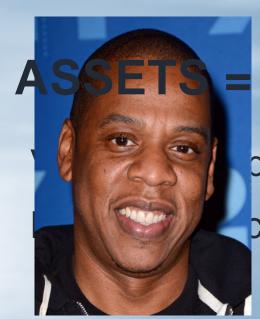
# TURNING DATA SETS INTO ASSETS, EVERYONE IS DOING IT WHY AREN'T YOU?"



Creating a "Forever Song"

**NWQMC 2019 Conference** 





#### DATA

perty:

come ass

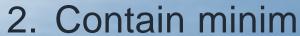
found - Available, accessible,



HAPPY

BIRTHDAY

rea





data nic/te endly



ormation to morningser of ds, quality, extent





# TOP REASONS VM/CS FALL SHORT

- 1. Volunteer Recruitment or Retention
- 2.Data Not Used

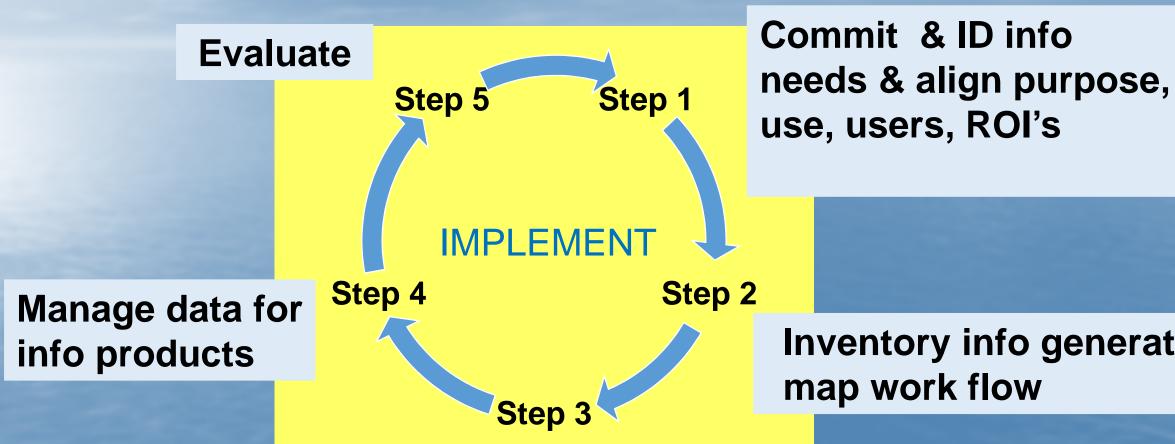
Asset'?

3. Resources - Sustainability

# TOP REASONS CWA AGENCIES FALL SHORT

- 1.Collaboration Leverage
- 2.Data Not Used >1x
- 3. Resources Sustainability

#### **HOW TO MAKE DATA SETS ASSETS**



Inventory info generating,

Manage Raw **Data to Verified** 

### EFFECTIVE MONITORING PROGRAMS

Produce Measurable, trackable or identifiable ROI's:

**Outputs** 

Results

**Outcomes** 

**Impacts** 

Data as Asset

**EFFECTIVE STUDY DESIGN** 



#### **COLORADO RIVER WATCH**

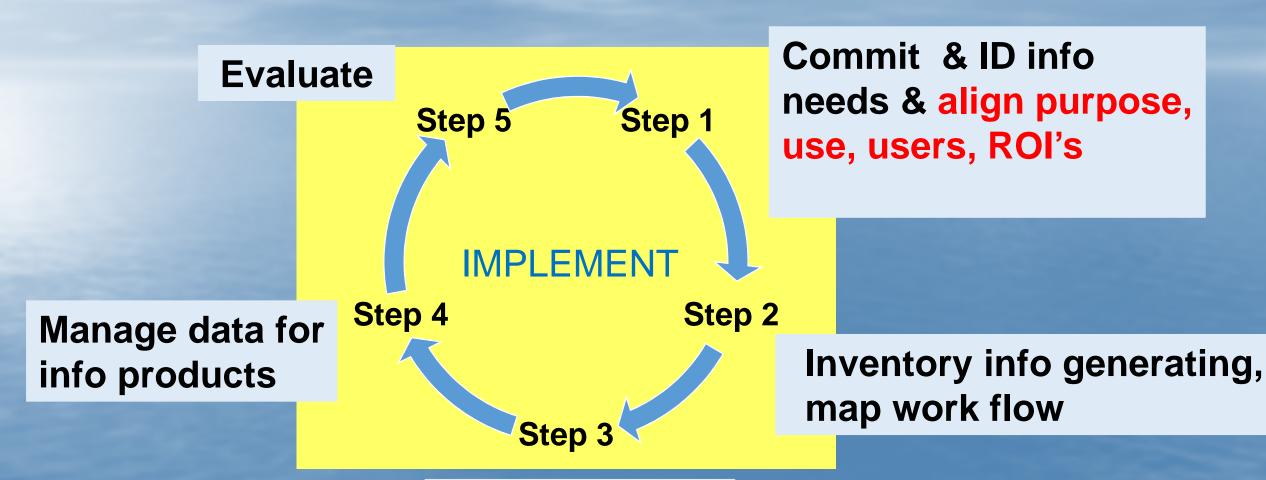
Real People Doing Real Science for a Real Purpose

- 1. Started 1989
- 2. Serves 140 groups, 500 stations/yr
- 3.7-field & 26 metals-total & dissolved monthly, 7-nut 2/yr, bugs/phys hab 1/yr

\*Top VM # of records in Portal

1. Goals: Generate quality data for CWA & Hands-on experience with rivers

#### **HOW TO MAKE DATA SETS ASSETS**



Manage Raw Data to Verified

## Each Monitoring? Continuum of Study Purposes

Condition /Trend - Impact - Effectivenes - Use Support

Continuum of Uses or Management Decisions

Education – Inquiry – Advocacy – Planning - Regulatory - Legal

#### Continuum of Users'

Youth, Adults, Farmers, Managers, Districts, Local G. Mate G, Fed G

### Continuum of ROI's

Behavior Change-Uses Met-Regulation-Policy-Health-Economy

Data Pathway

Or Information Blue Print

Info needs & Products

Evaluation

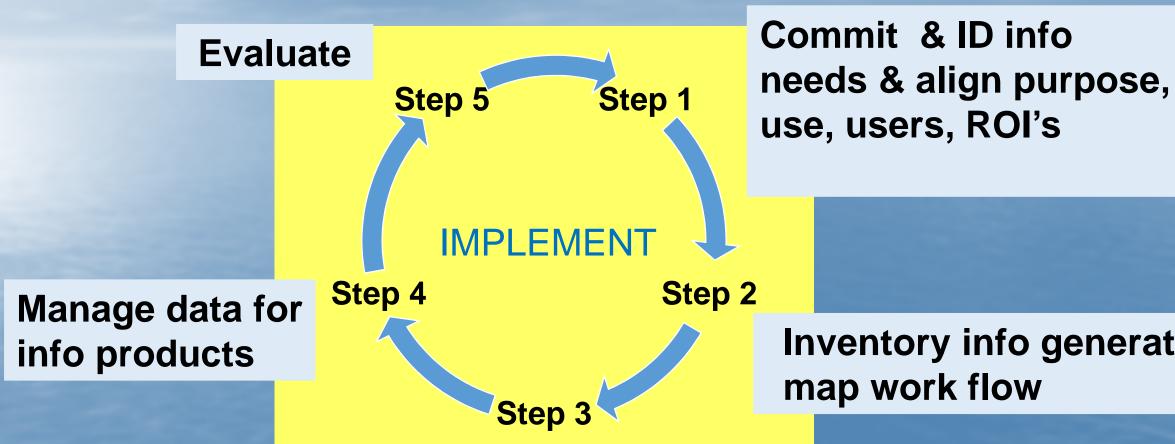


#### **COLORADO RIVER WATCH**

Real People Doing Real Science for a Real Purpose

# SAME Study Design generates multiple Data Pathways and ROI's

#### **HOW TO MAKE DATA SETS ASSETS**

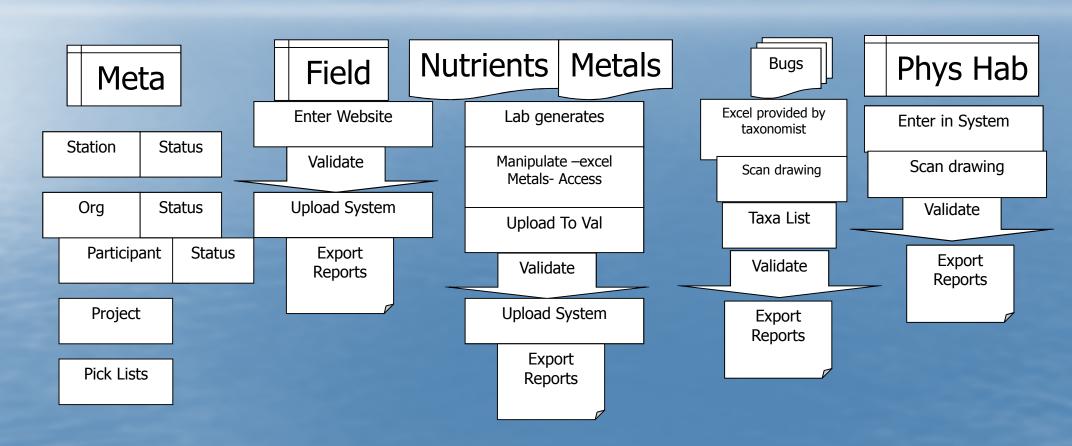


Inventory info generating,

Manage Raw **Data to Verified** 

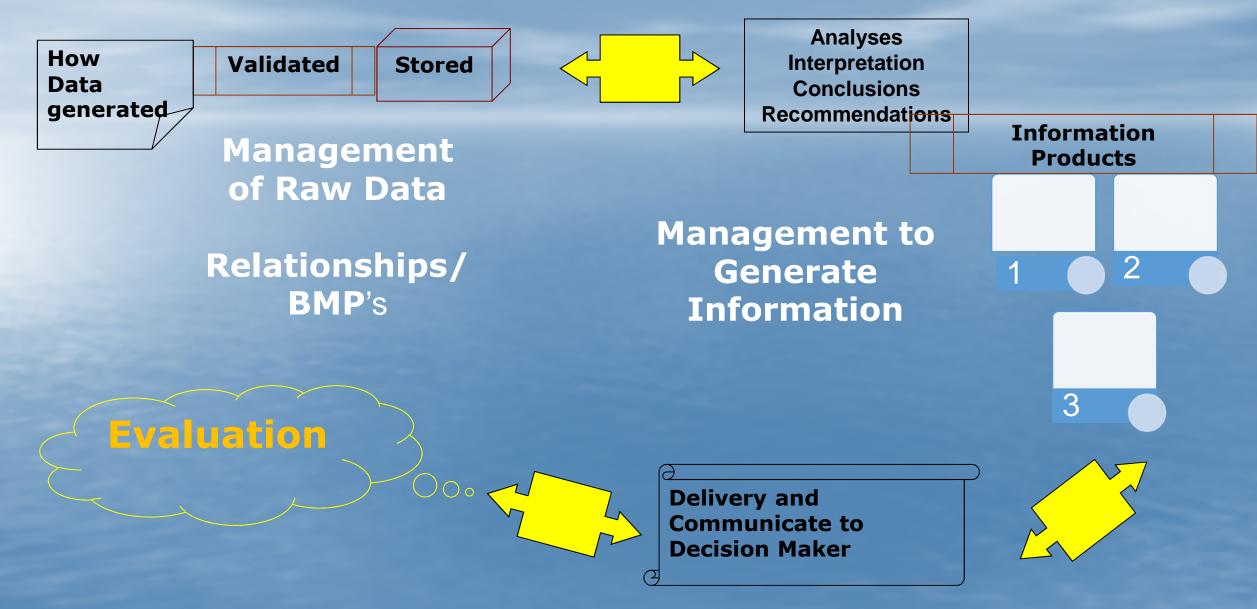
#### **IDENTIFY INFO NEEDS - DEVELOP** Raw Data INFO PRODUCTS TO SERVE INFO NEEDS **Design for Information** Analyses **Delivery** Recommendations **Exit Points Information Products** Interpretation

## INVENTORY WHAT GENERATING & PATH TO REPOSITORY AND INFO PRODUCTS

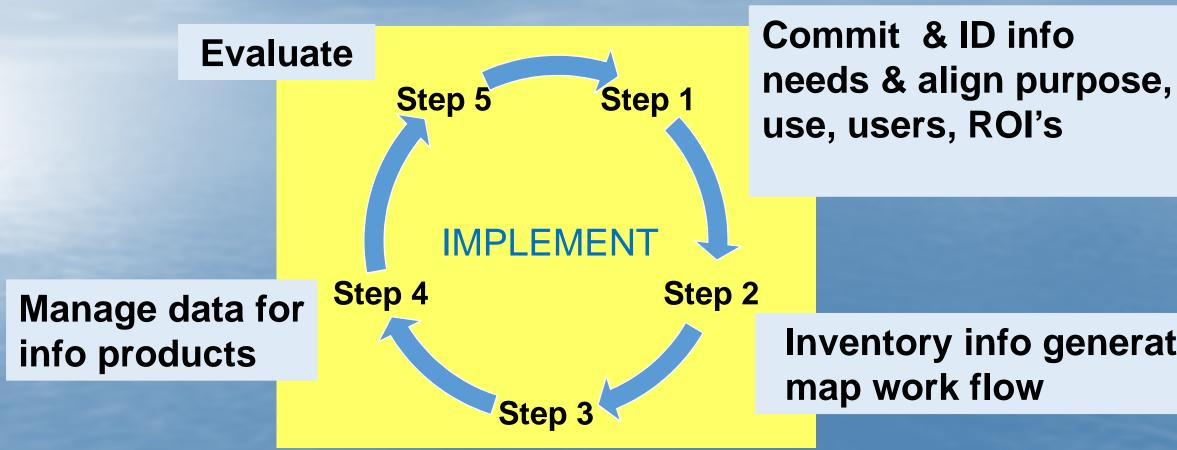


**Example of raw data mapping for CO River Watch** 

#### MAP DATA PATH FOR EVERY INDICATOR



#### **HOW TO MAKE DATA SETS ASSETS**



Inventory info generating, map work flow

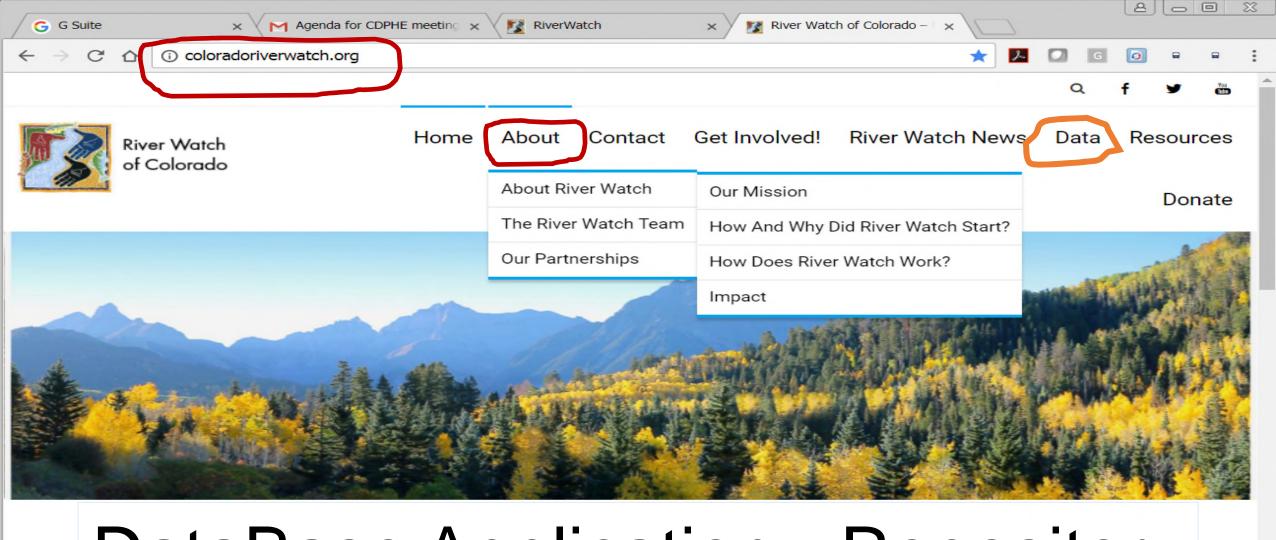
Manage Raw **Data to Verified** 



### COLORADO RIVER WATCH

Real People Doing Real Science for a Real Purpose

1989—pre desk top computer Used National WQ Portal Schema to design application, added organization, equipment & meta data pieces



### Abou Data Base Application - Repository

River Watch is a statewide volunteer water quality-monitoring program operated by the non profit 50103 ESth FSce in cooperation at the control of the coloradoriverwatch.org/about/our-mission/

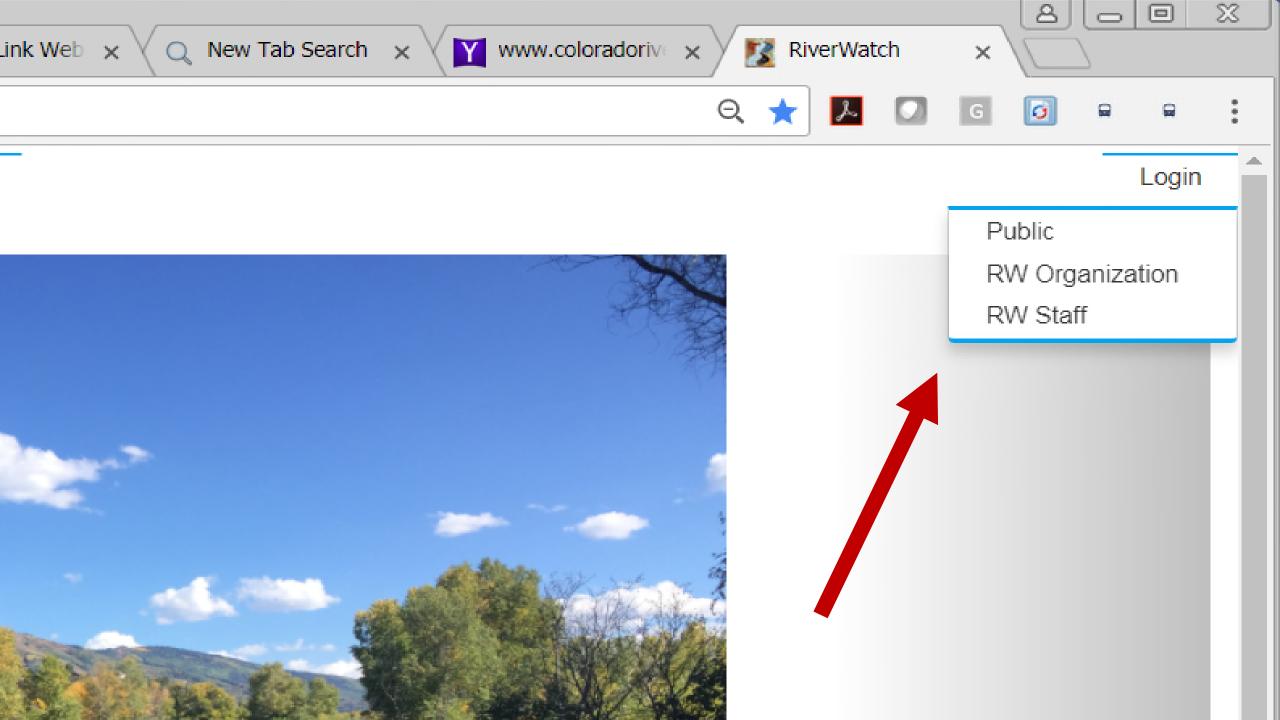
ity data to educate citizens and inform decision makers about

#### CO RIVER WATCH DBASE APPLICATION & WEBSITE

- Permission levels
- Password protected
- Track users and use
- Status and activity of a organization & station real time
- BMP's in storage and data integrity, etc.
- Accessible so updatable

#### CO RIVER WATCH DBASE APPLICATION

- Data exports possible can query
- Access to meta data reports
- Scalable & Agile
- Flexible incorporation of quality assurance measures in validation/reporting

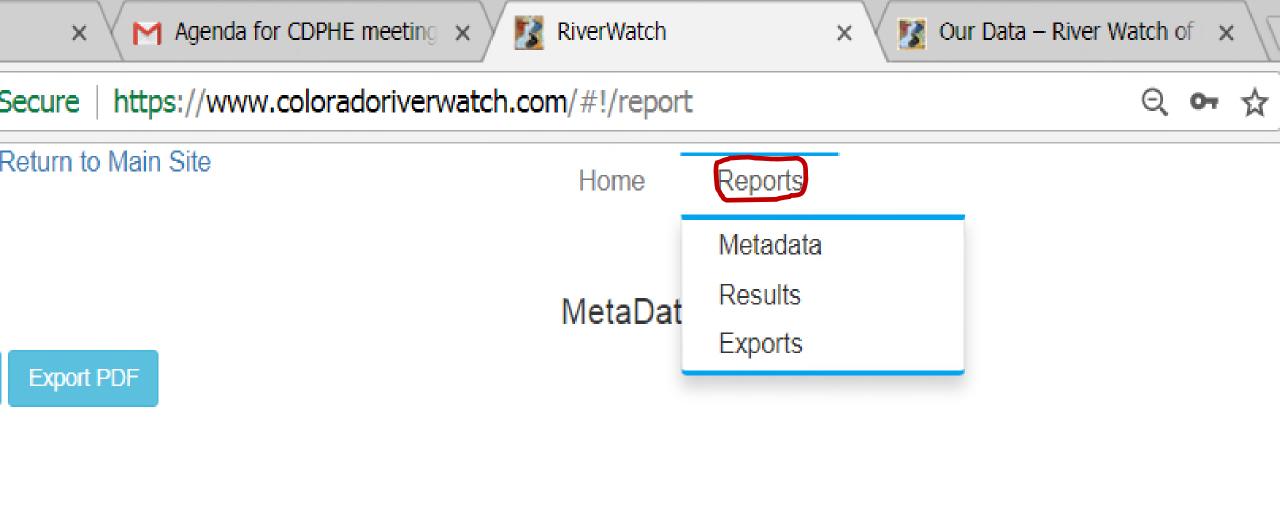


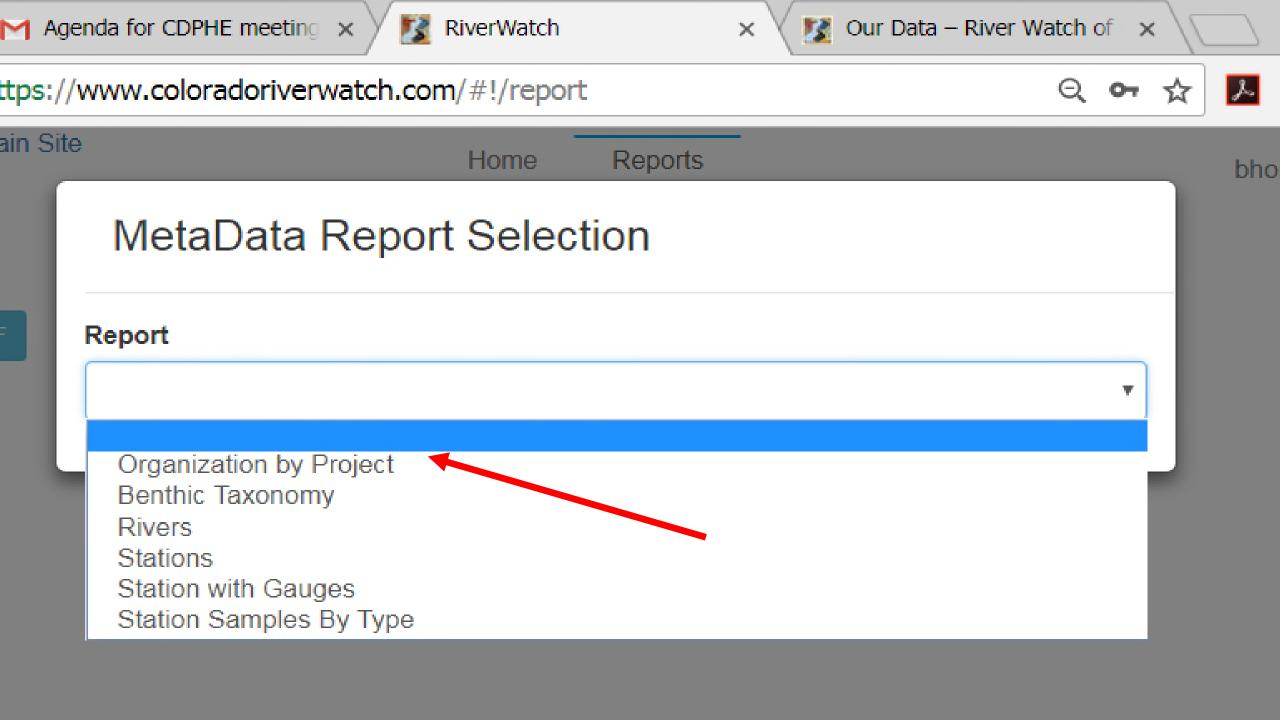
#### WHAT USER CAN'T DO

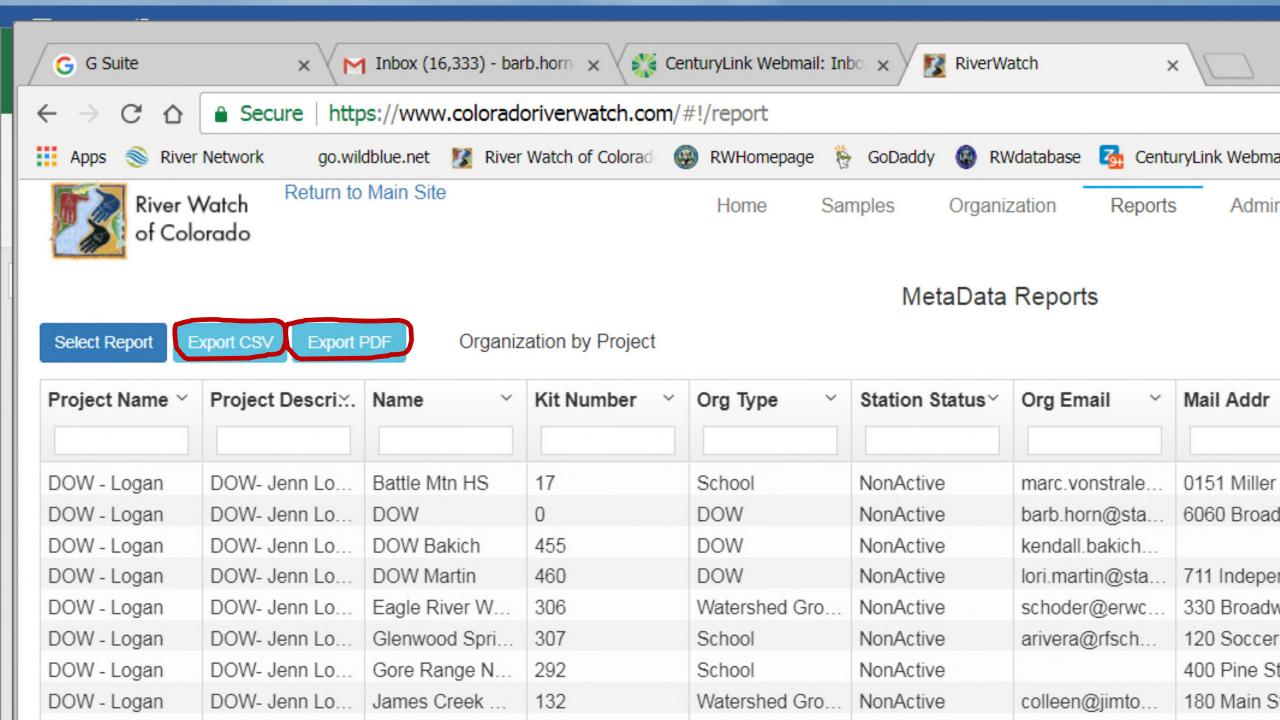
Add, edit, validate or change any raw data, look up tables or meta-data

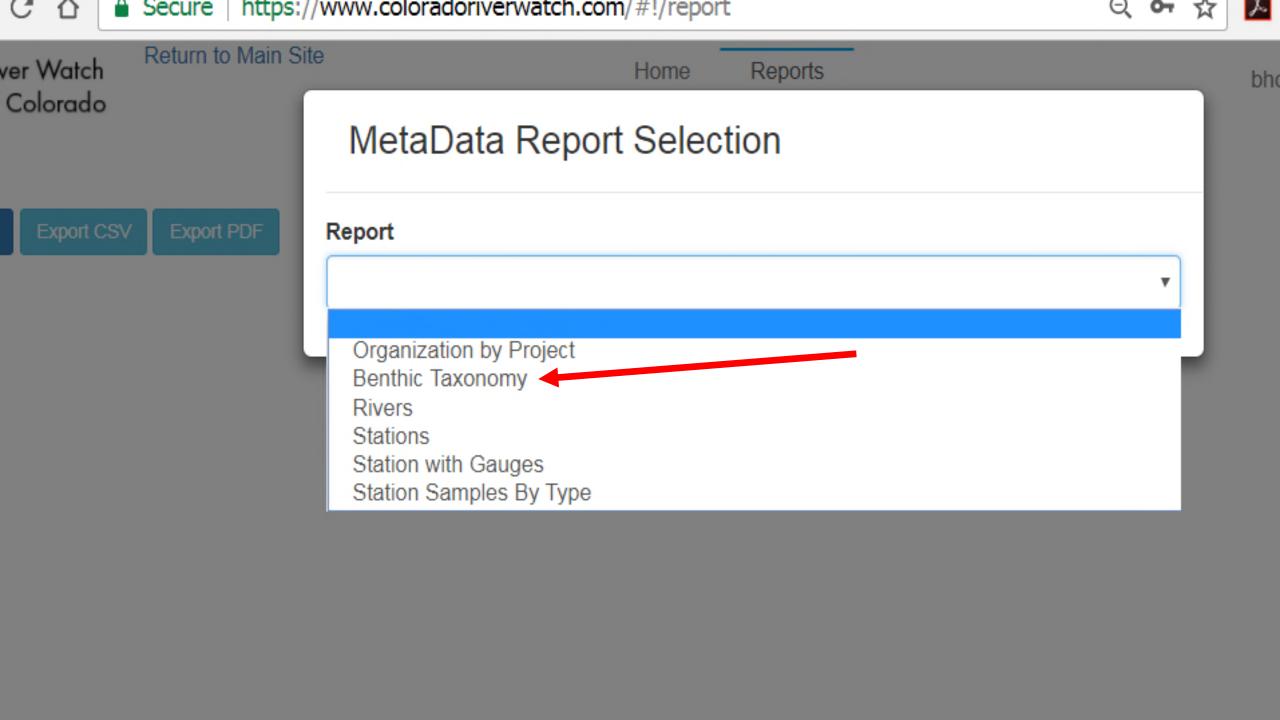
Ask folks go to NWQP or Co DSN for large exports

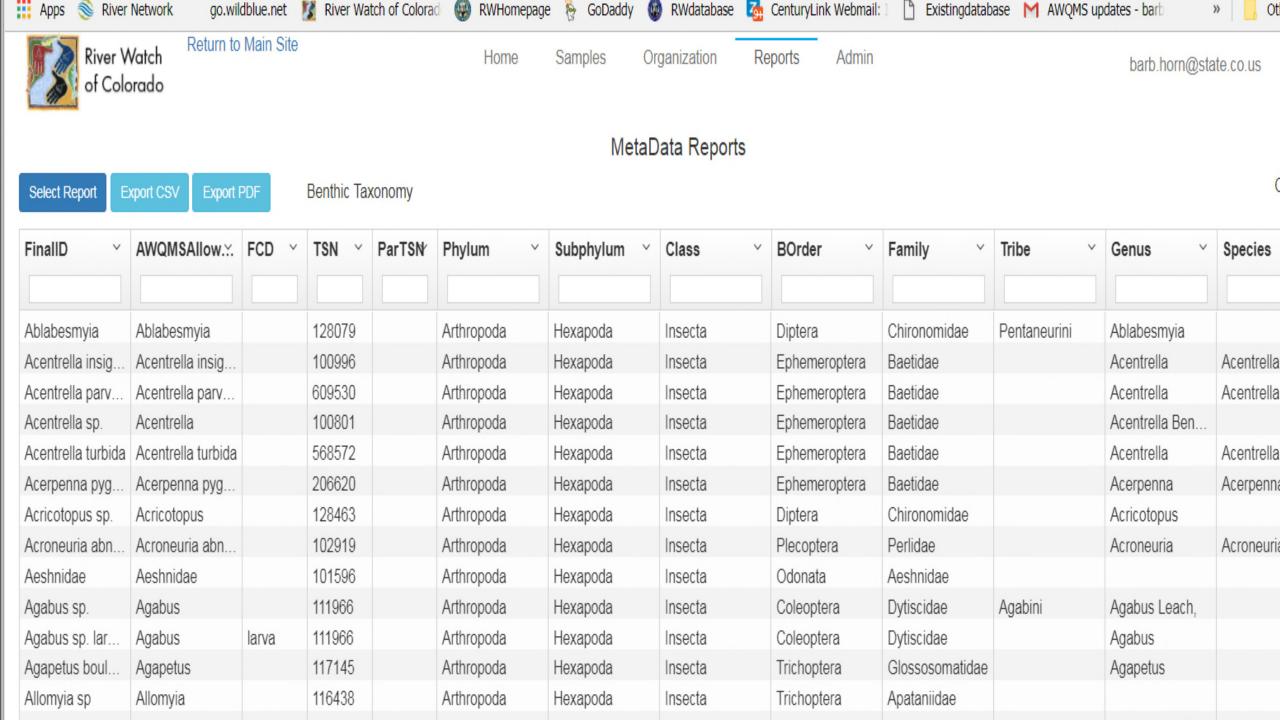
٠.

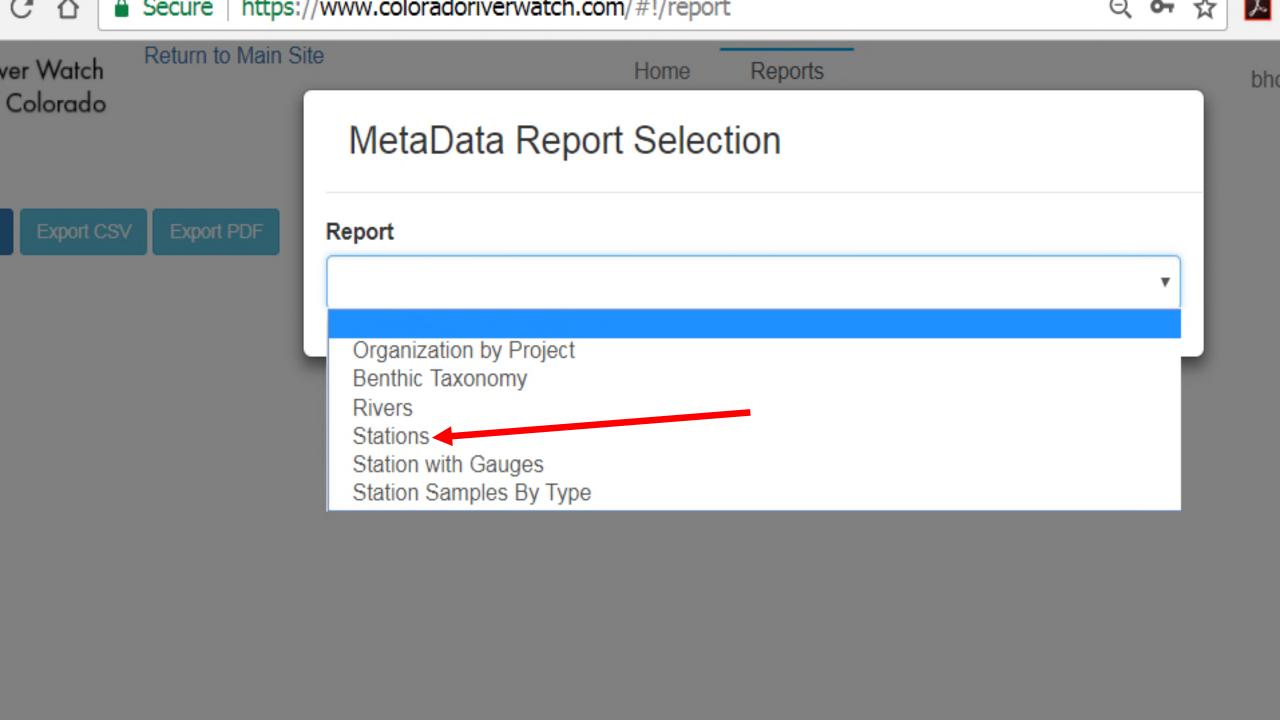


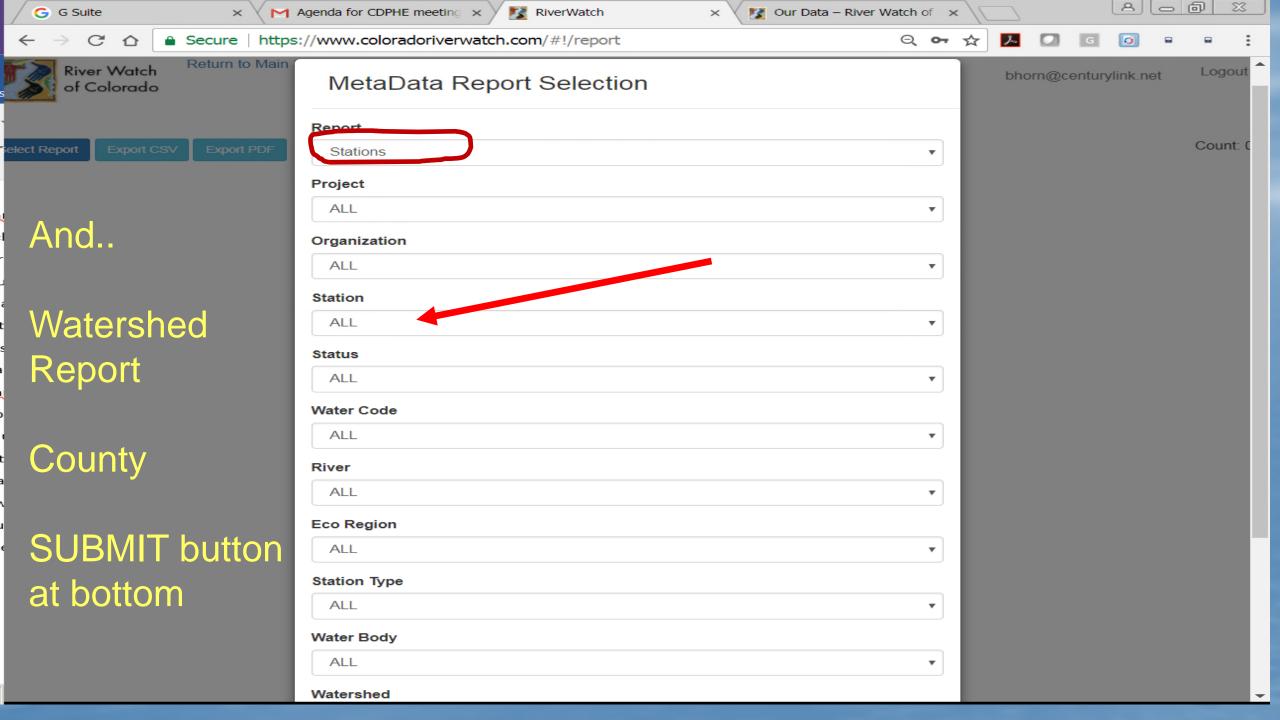


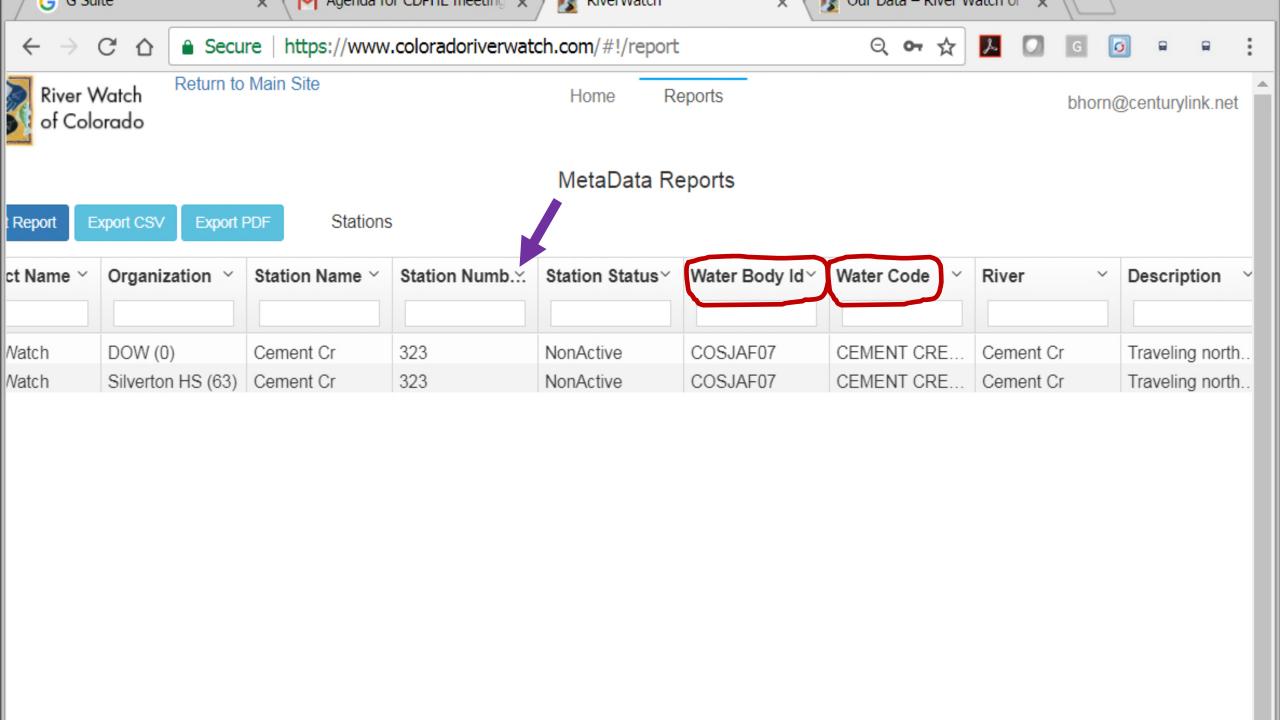










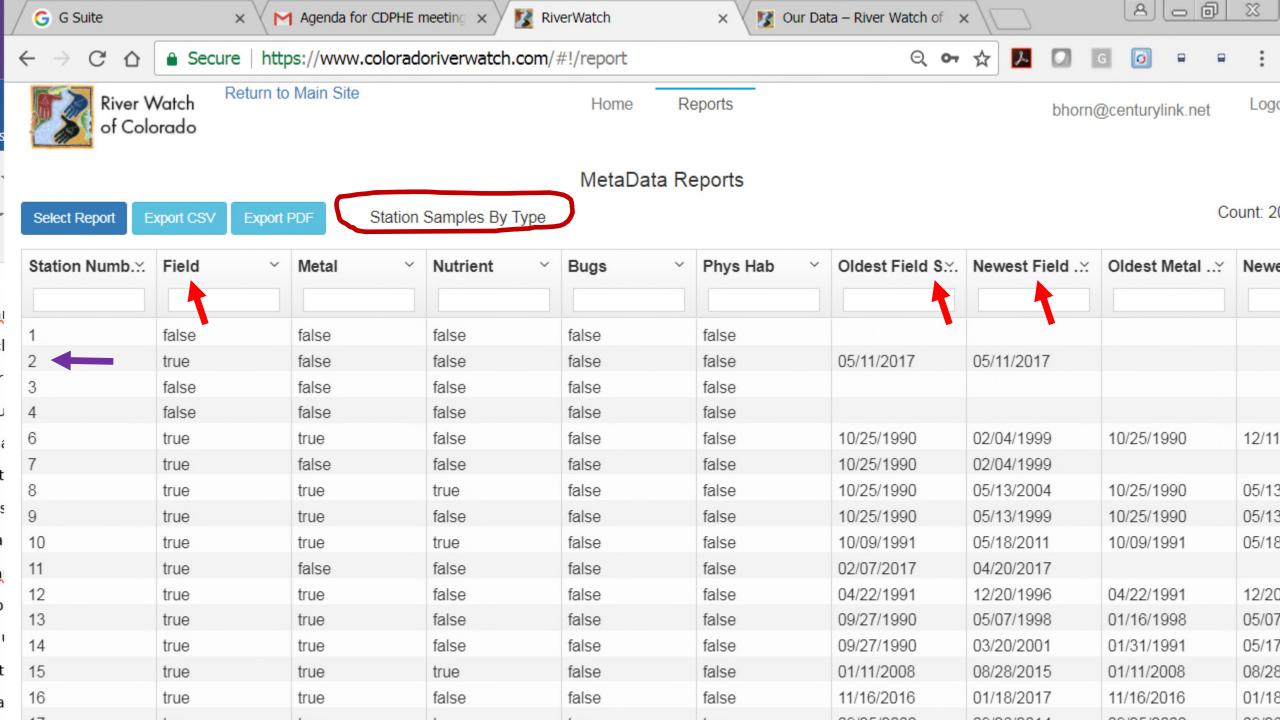


#### ALL THE FIELDS IN STATION FOR FURTHER

#### **SORTING:**

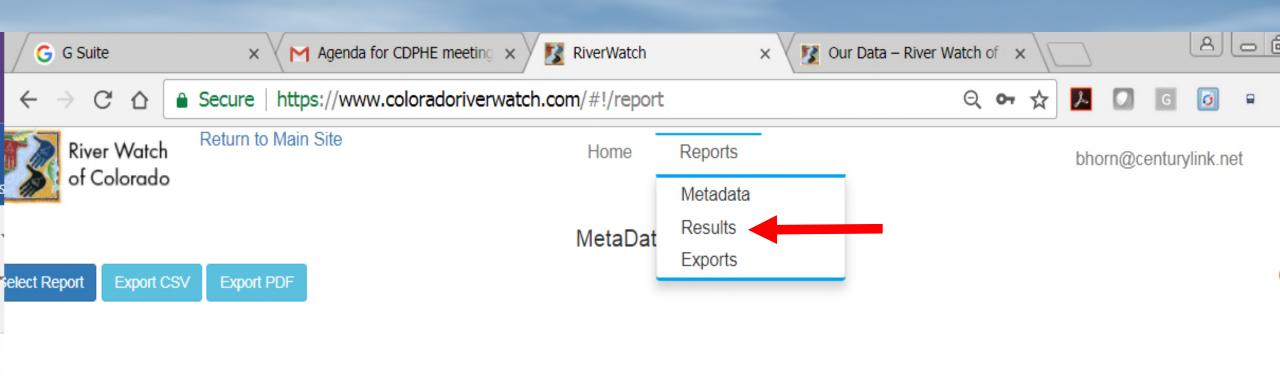
- Water Body ID (WQCC)
- Water Code (CPW)
- Driving Description
- Station Type
- Aquatic Index
- RW Watershed
- Quadi
- Township
- Range
- Cention Vers Fegion.
   Qualter Suction Vers Fegion.
- Grid

- Sta Quad (Topo map)
- WQCC Sub WS
- Hydro Unit (8 and 12 but..)
- Ecoregion
- Elevation
- Watershed
- Long/Lat
- Utmx /y
- County
- State
- Nearest City
- - JSGS/State Engineer Gauge



to Main Site Samples Organization Home Reports Admin **Exports Report Selection** Report AWQMS - Bugs AWQMS - Field The Ambient Water AWQMS - Metal/Nutrients AWQMS - Physical Habitat AWQMS - Station Quality Monitoring EDAS - Bugs EDAS - Station Predictors GAP - River Codes System (AWQMS)=NWP GAP - RWStoret GAP - Station Description GAP - Tracking Schema GAP - WBKey WQSTD - H2O Raw Tables

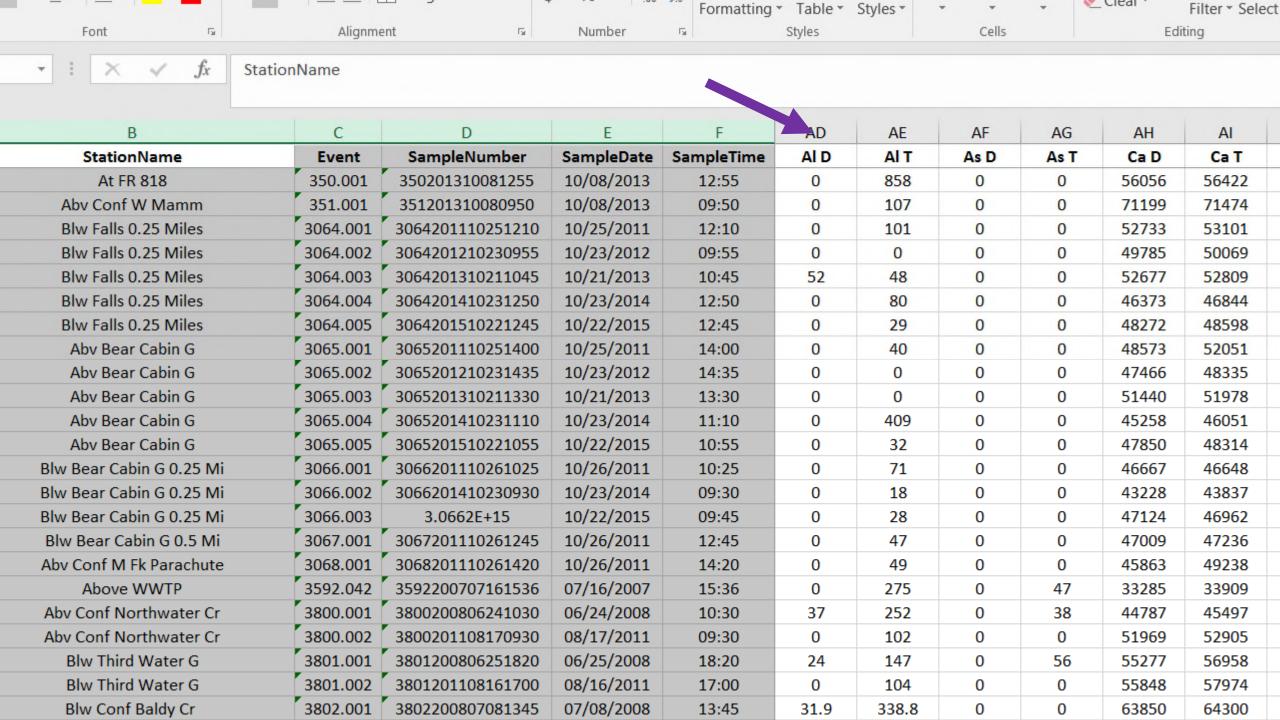
https://goldsystems.com/

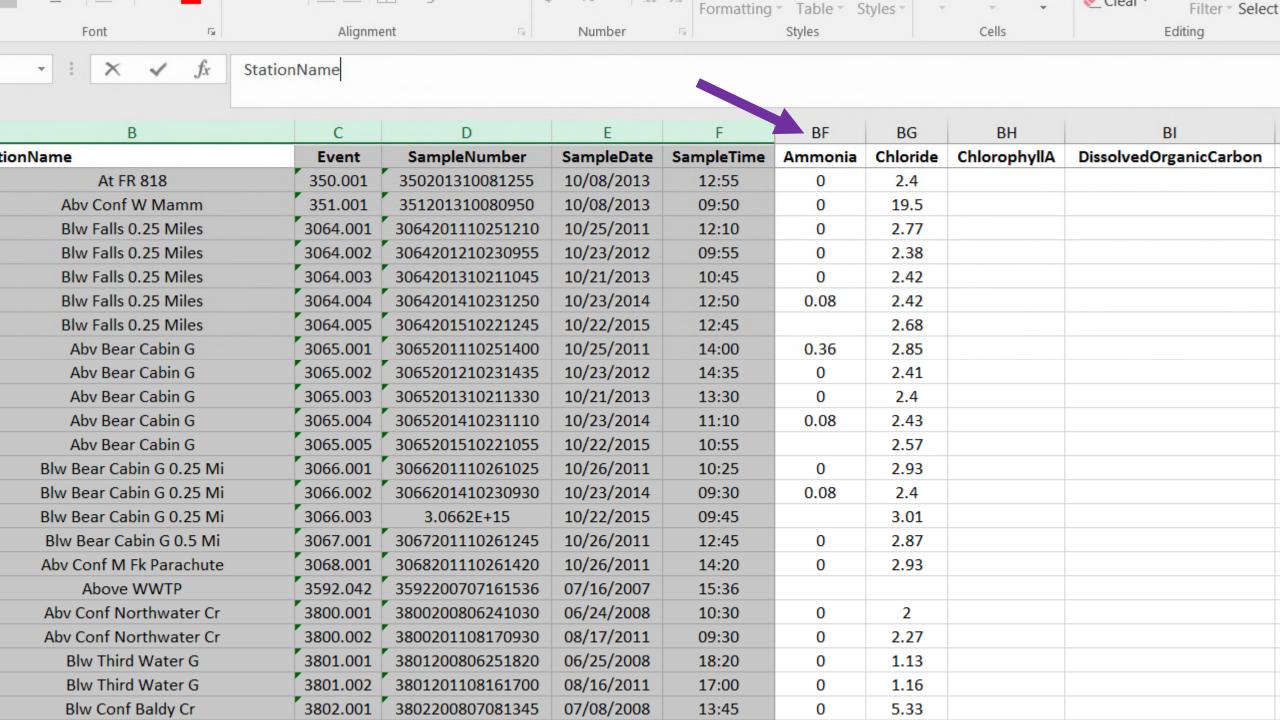


Results Report election Report All Sample Results Please open and read the a cached FAQ PDF document to under land how these reports work. After you have read the document, place acknowledge reading it by clicking checkbox below. **►** FAQ I have read the FAQ Select Result Type Organization ALL Project ALL ALL Watershed County ALL 3 WQCC Sub Watershed ALL Watershed Gathering ALL River ALL WaterCode ALL Watershed Body Id ALL Watershed Report ALL ALL Station 5 Results in Excel only 2017 Year Run Report

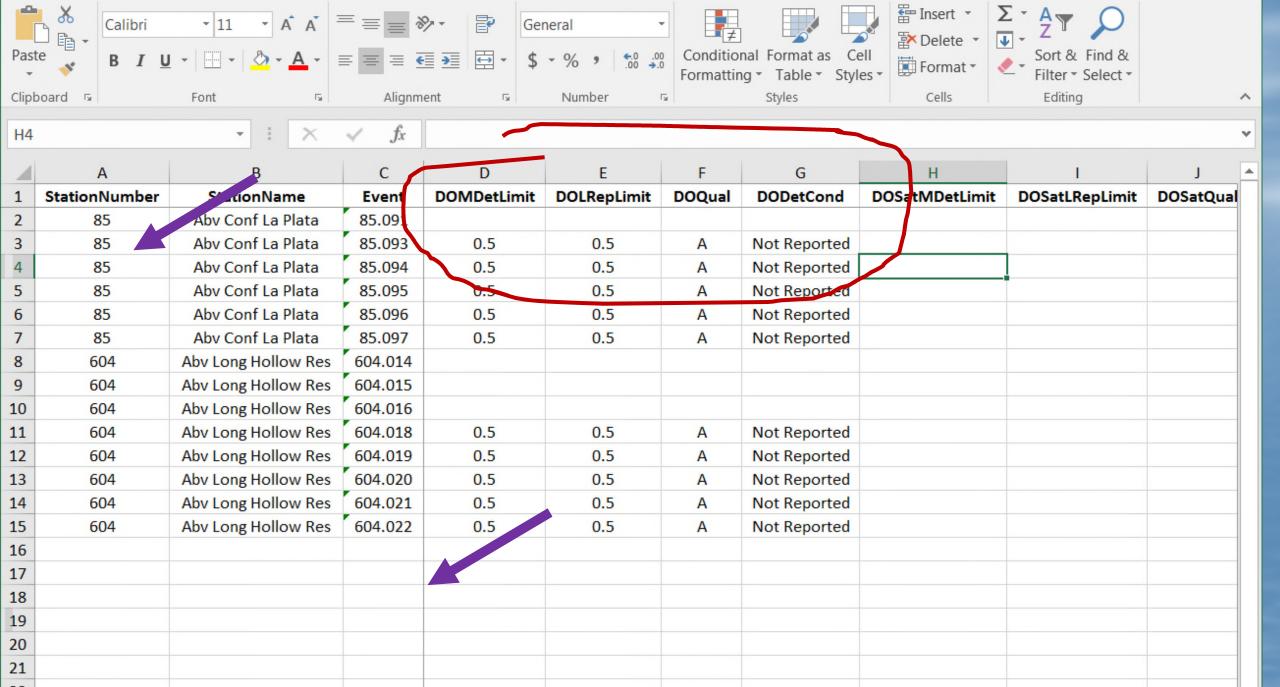
	Clipboard	□ Font □	Alignme	nt 5	Number	Tomatting	Styles	styles	Cells
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B1		→ ! × ✓ fx Star	tionName						
	A	В	С	D	F	E	G	Н	1
1	StationNumber	StationName	Event	SampleNumber	SampleDate	SampleTime	TypeCode		River
2	350	At FR 818	350.001	350201310081255	10/08/2013	12:55	00	SJ	W Mamm
3	351	Abv Conf W Mamm	351.001	351201310080950	10/08/2013	09:50	00	SJ	Mid Mamn
4	3064	Blw Falls 0.25 Miles	3064.001	3064201110251210	10/25/2011	12:10	00	SJ	E M Fk Parad
5	3064	Blw Falls 0.25 Miles	3064.002	3064201210230955	10/23/2012	09:55	00	SJ	E M Fk Parad
6	3064	Blw Falls 0.25 Miles	3064.003	3064201310211045	10/21/2013	10:45	00	SJ	E M Fk Parad
7	3064	Blw Falls 0.25 Miles	3064.004	3064201410231250	10/23/2014	12:50	00	SJ	E M Fk Parad
8	3064	Blw Falls 0.25 Miles	3064.005	3064201510221245	10/22/2015	12:45	00	SJ	E M Fk Parad
9	3065	Abv Bear Cabin G	3065.001	3065201110251400	10/25/2011	14:00	00	SJ	E M Fk Parad
10	3065	Abv Bear Cabin G	3065.002	3065201210231435	10/23/2012	14:35	00	SJ	E M Fk Parad
11	3065	Abv Bear Cabin G	3065.003	3065201310211330	10/21/2013	13:30	00	SJ	E M Fk Parad
12	3065	Abv Bear Cabin G	3065.004	3065201410231110	10/23/2014	11:10	00	SJ	E M Fk Parad
13	3065	Abv Bear Cabin G	3065.005	3065201510221055	10/22/2015	10:55	00	SJ	E M Fk Parad
14	3066	Blw Bear Cabin G 0.25 Mi	3066.001	3066201110261025	10/26/2011	10:25	00	SJ	E M Fk Parad
15	3066	Blw Bear Cabin G 0.25 Mi	3066.002	3066201410230930	10/23/2014	09:30	00	SJ	E M Fk Parad
16	3066	Blw Bear Cabin G 0.25 Mi	3066.003	3.0662E+15	10/22/2015	09:45	00	SJ	E M Fk Parad
17	3067	Blw Bear Cabin G 0.5 Mi	3067.001	3067201110261245	10/26/2011	12:45	00	SJ	E M Fk Parad
18	3068	Abv Conf M Fk Parachute	3068.001	3068201110261420	10/26/2011	14:20	00	SJ	E M Fk Parac
19	3592	Above WWTP	3592.042	3592200707161536	07/16/2007	15:36	00	SJ	San Migu
20	3800	Abv Conf Northwater Cr	3800.001	3800200806241030	06/24/2008	10:30	00	SJ	Trapper (
21	3800	Abv Conf Northwater Cr	3800.002	3800201108170930	08/17/2011	09:30	00	SJ	Trapper (
22	3801	Blw Third Water G	3801.001	3801200806251820	06/25/2008	18:20	00	SJ	E Fk Parachu
23	3801	Blw Third Water G	3801.002	3801201108161700	08/16/2011	17:00	00	SJ	E Fk Parachu
24	3802	Blw Conf Baldy Cr	3802.001	3802200807081345	07/08/2008	13:45	00	SJ	Garfield
		21 2 (2.11.2	7,000,000		07/07/0044				

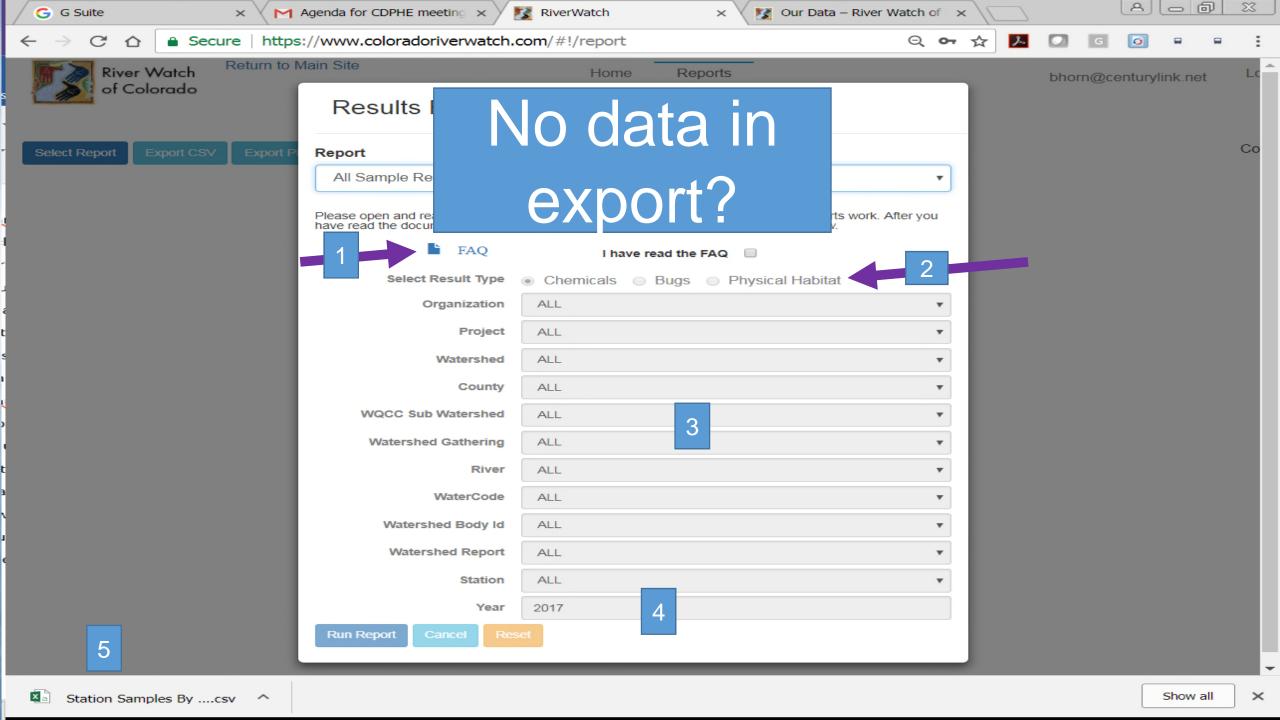
1	Α	В	С	D	Е	F	U	V	W	X
1	StationNumber	StationName	Event	SampleNumber	SampleDate	SampleTime	Do	DoSat	Ph	PhenA
2	350	At FR 818	350.001	350201310081255	10/08/2013	12:55				
3	351	Abv Conf W Mamm	351.001	351201310080950	10/08/2013	09:50				
4	3064	Blw Falls 0.25 Miles	3064.001	3064201110251210	10/25/2011	12:10	10		8.92	
5	3064	Blw Falls 0.25 Miles	3064.002	3064201210230955	10/23/2012	09:55	9.4		8.75	8
6	3064	Blw Falls 0.25 Miles	3064.003	3064201310211045	10/21/2013	10:45	11.23		8.56	28
7	3064	Blw Falls 0.25 Miles	3064.004	3064201410231250	10/23/2014	12:50				
8	3064	Blw Falls 0.25 Miles	3064.005	3064201510221245	10/22/2015	12:45				
9	3065	Abv Bear Cabin G	3065.001	3065201110251400	10/25/2011	14:00	10		8.94	
10	3065	Abv Bear Cabin G	3065.002	3065201210231435	10/23/2012	14:35	8.3		8.48	32
11	3065	Abv Bear Cabin G	3065.003	3065201310211330	10/21/2013	13:30	11		8.45	36
12	3065	Abv Bear Cabin G	3065.004	3065201410231110	10/23/2014	11:10				
13	3065	Abv Bear Cabin G	3065.005	3065201510221055	10/22/2015	10:55				
14	3066	Blw Bear Cabin G 0.25 Mi	3066.001	3066201110261025	10/26/2011	10:25	11		8.42	
15	3066	Blw Bear Cabin G 0.25 Mi	3066.002	3066201410230930	10/23/2014	09:30				
16	3066	Blw Bear Cabin G 0.25 Mi	3066.003	3.0662E+15	10/22/2015	09:45				
17	3067	Blw Bear Cabin G 0.5 Mi	3067.001	3067201110261245	10/26/2011	12:45	10		8.77	
18	3068	Abv Conf M Fk Parachute	3068.001	3068201110261420	10/26/2011	14:20	5		8.98	
19	3592	Above WWTP	3592.042	3592200707161536	07/16/2007	15:36			8.01	0
20	3800	Abv Conf Northwater Cr	3800.001	3800200806241030	06/24/2008	10:30			8.8	
21	3800	Abv Conf Northwater Cr	3800.002	3800201108170930	08/17/2011	09:30	8		8.64	40
22	3801	Blw Third Water G	3801.001	3801200806251820	06/25/2008	18:20			8.55	
23	3801	Blw Third Water G	3801.002	3801201108161700	08/16/2011	17:00	8		8.45	22
24	3802	Blw Conf Baldy Cr	3802.001	3802200807081345	07/08/2008	13:45			8.64	
25	3802	Blw Conf Baldy Cr	3802.002	3802201107270945	07/27/2011	09:45	9		8.61	22
26	3803	Abv Conf Baldy Cr	3803.001	3803200807091345	07/09/2008	13:45			8.6	
27	3803	Abv Conf Baldy Cr	3803.002	3803201107271230	07/27/2011	12:30	7		8.51	36
	2001	***	7	000400007404000	07/40/0000	40.00				





4	Α	В	С	D	E	F	G	Н	1	J 🔺
1	StationNumber	StationName	Event	SampleNumber	SampleDate	SampleTime	TypeCode	Watershed	River	OrganizationN
2	85	Abv Conf La Plata	85.091	85201701061015	01/06/2017	10:15	00	SP	Long Hollow Cr	DOW
3	85	Abv Conf La Plata	85.092	85201704050945	04/05/2017	09:45	00	SP	Long Hollow Cr	DOW
1 4	85	Abv Conf La Plata	85.093	85201705030800	05/03/2017	08:00	00	SP	Long Hollow Cr	DOW
5	85	Abv Conf La Plata	85.094	85201706041700	06/04/2017	17:00	00	SP	Long Hollow Cr	DOW
6	85	Abv Conf La Plata	85.095	85201707031000	07/03/2017	10:00	00	SP	Long Hollow Cr	DOW
7	85	Abv Conf La Plata	85.096	85201708220959	08/22/2017	09:59	00	SP	Long Hollow Cr	DOW
8 3	85	Abv Conf La Plata	85.097	85201709061230	09/06/2017	12:30	00	SP	Long Hollow Cr	DOW
9	604	Abv Long Hollow Res	604.014	604201701061000	01/06/2017	10:00	00	SP	Long Hollow Cr	DOW
10	604	Abv Long Hollow Res	604.015	604201702060845	02/06/2017	08:45	00	SP	Long Hollow Cr	DOW
5 11	604	Abv Long Hollow Res	604.016	604201703020830	03/02/2017	08:30	00	SP	Long Hollow Cr	DOW
12	604	Abv Long Hollow Res	604.017	604201704050845	04/05/2017	08:45	00	SP	Long Hollow Cr	DOW
13	604	Abv Long Hollow Res	604.018	604201705030715	05/03/2017	07:15	00	SP	Long Hollow Cr	DOW
14	604	Abv Long Hollow Res	604.019	604201706041600	06/04/2017	16:00	00	SP	Long Hollow Cr	DOW
15	604	Abv Long Hollow Res	604.020	604201707030900	07/03/2017	09:00	00	SP	Long Hollow Cr	DOW
16	604	Abv Long Hollow Res	604.021	604201708220900	08/22/2017	09:00	00	SP	Long Hollow Cr	DOW
17	604	Abv Long Hollow Res	604.022	604201709061130	09/06/2017	11:30	00	SP	Long Hollow Cr	DOW
18										
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Admin

### Admin Report Selection

#### Report

Stations With No Samples

Events With No Data

Stations With Samples But No Description

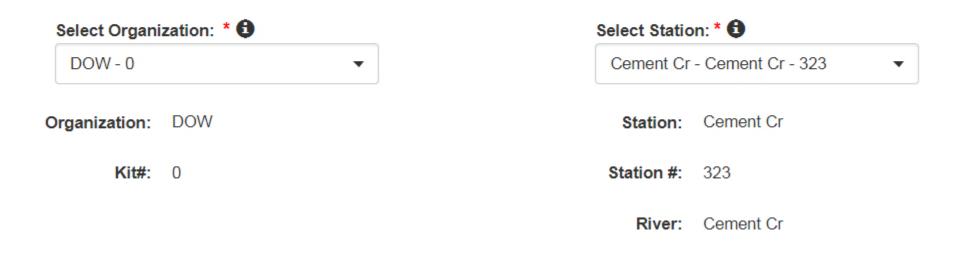
Organizations Without Samples - By Quarter

Consecutive Monthly Samples By Station

**Chemical Limits** 

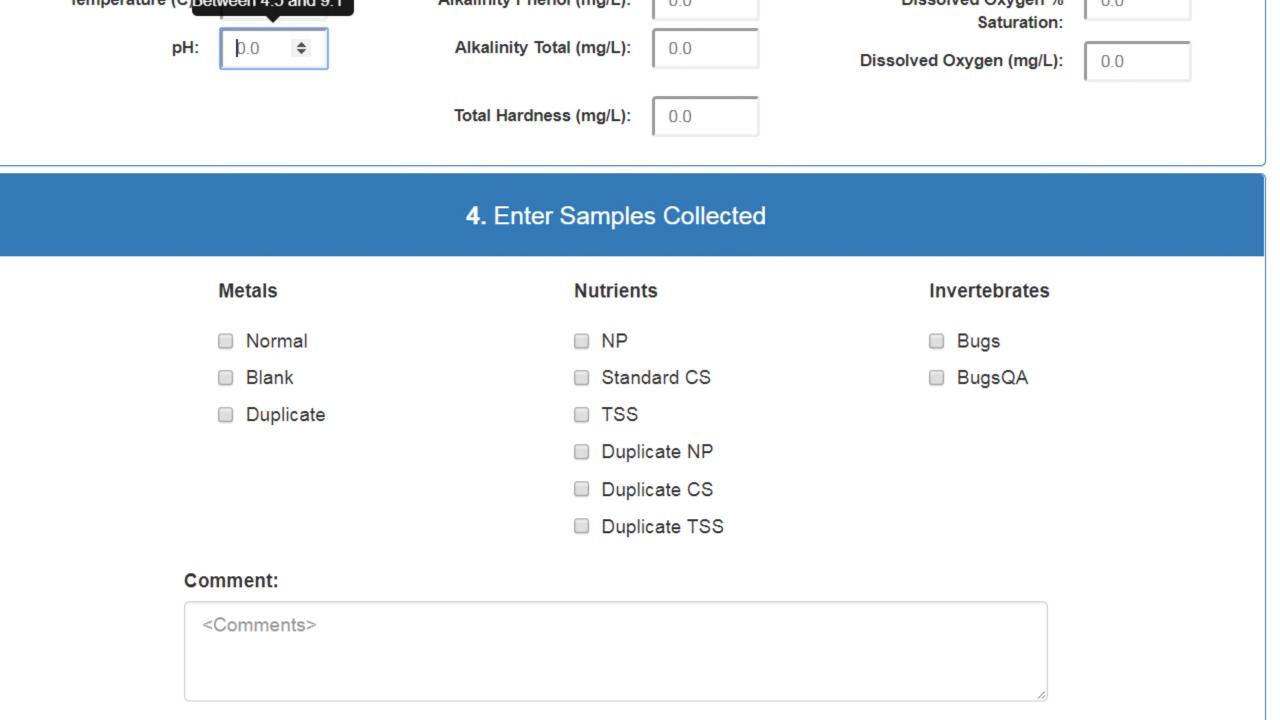
All Users

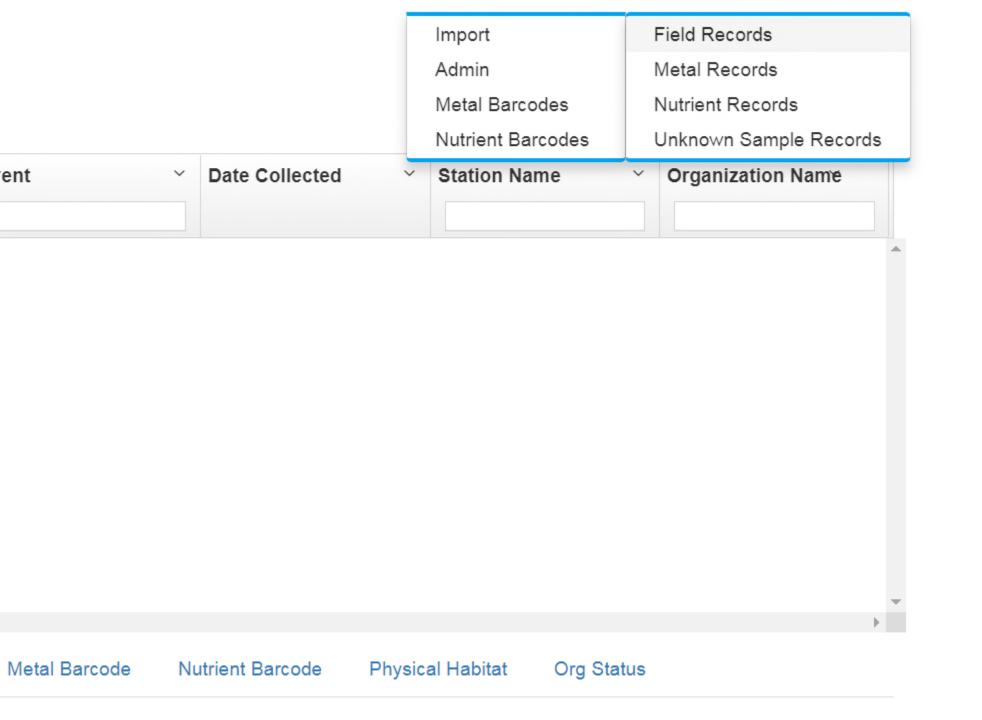
#### 1. Select an Organization and Station for which you are entering data

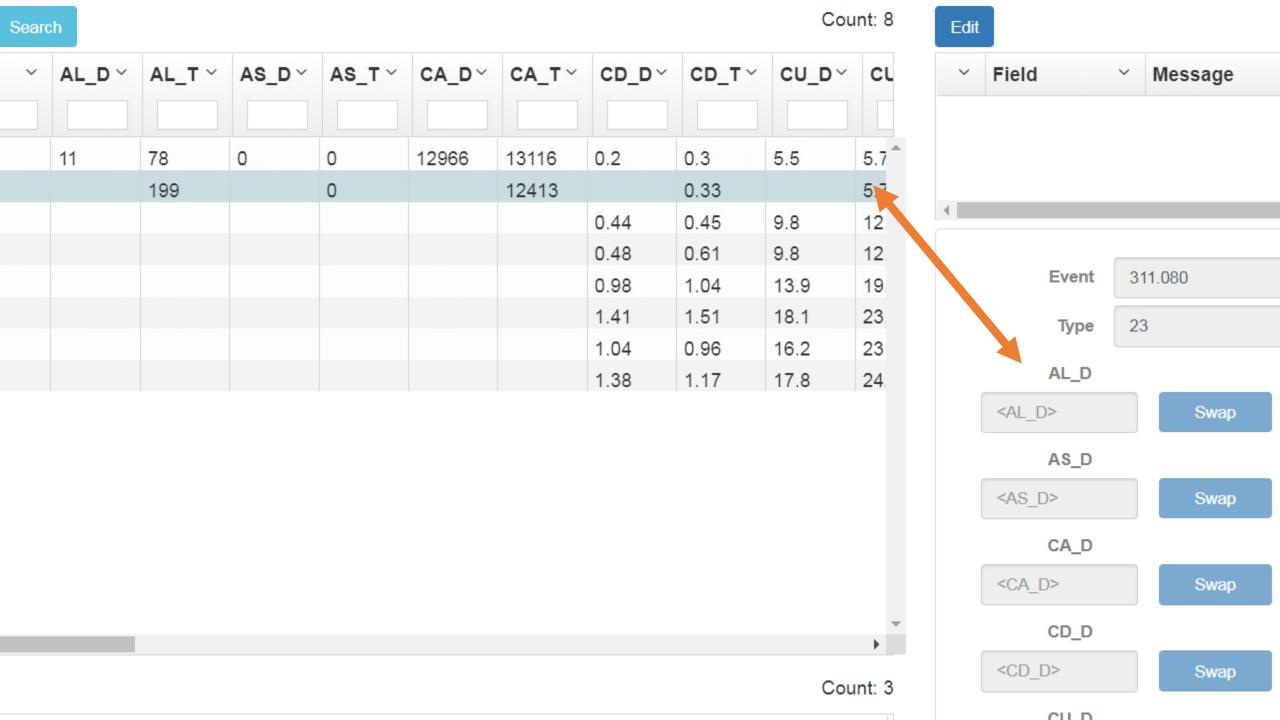


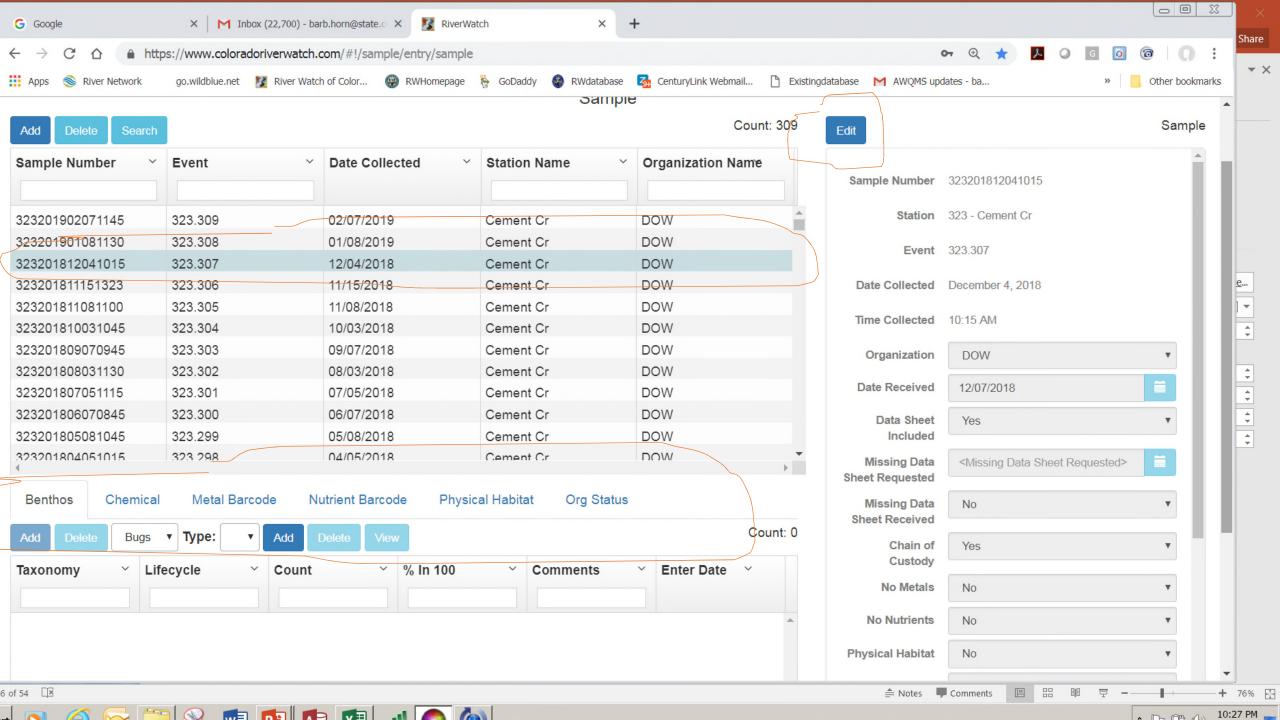
#### 2. Enter Sample Information

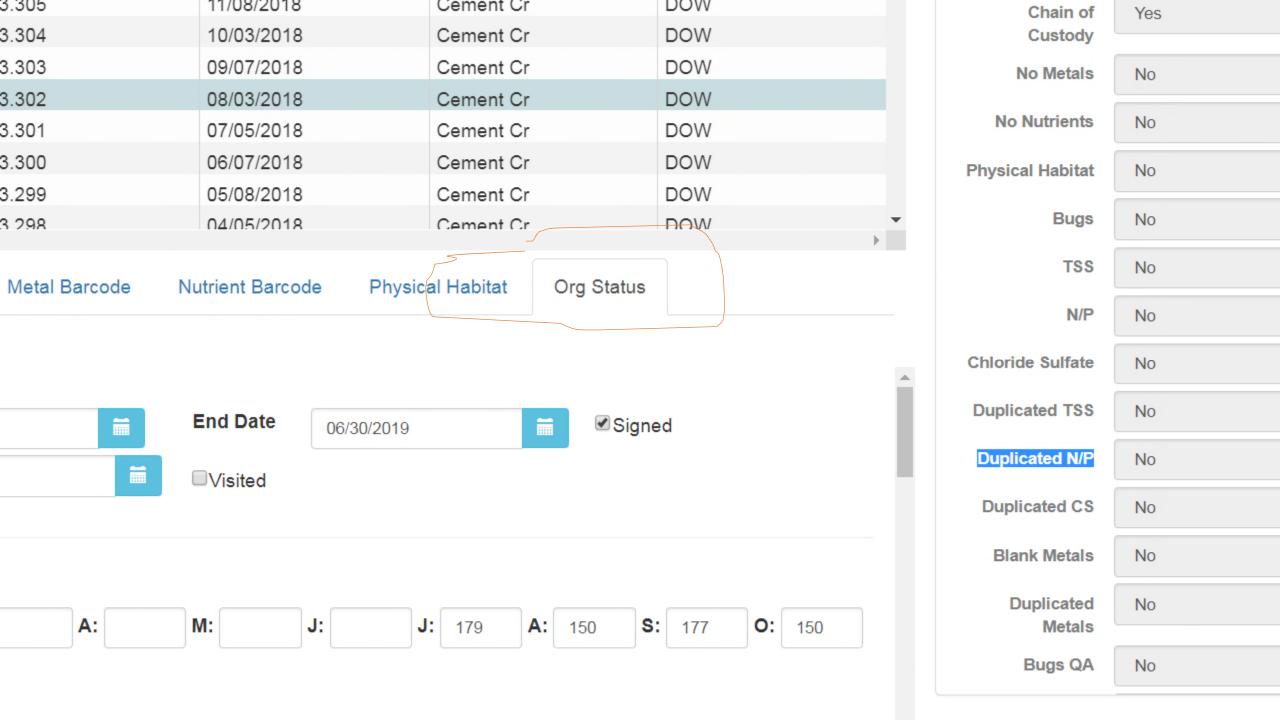




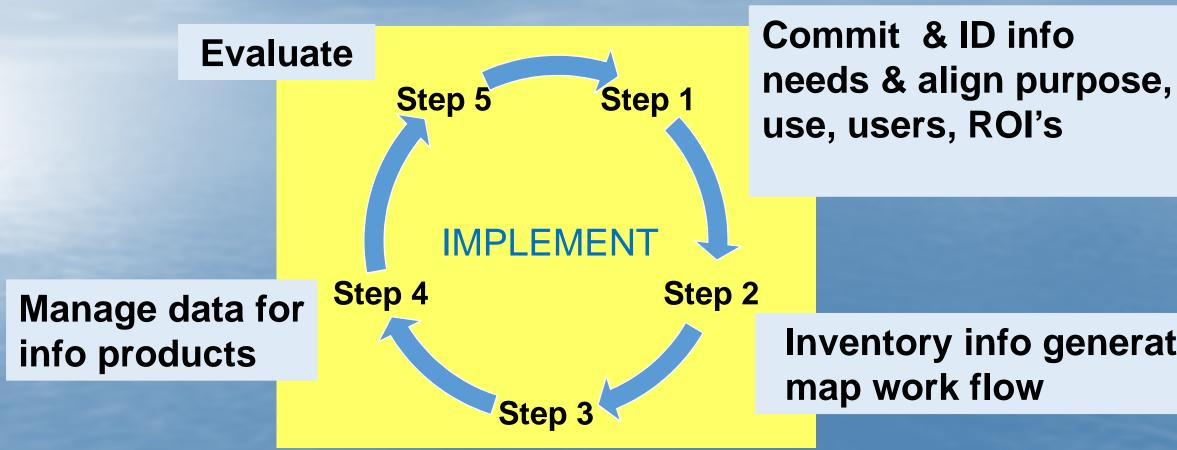






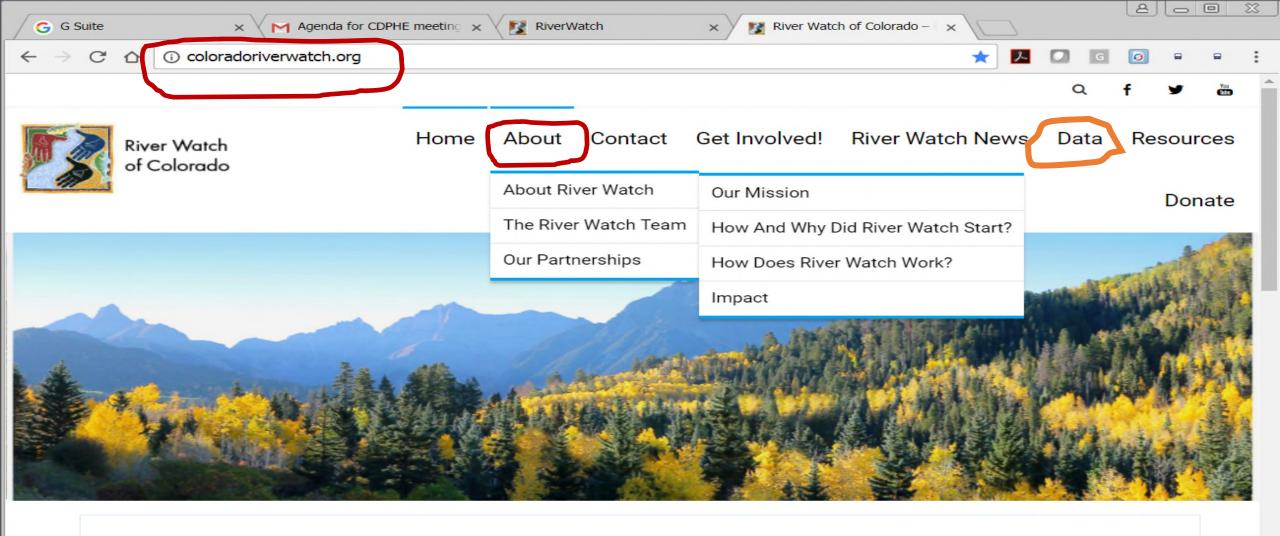


## **HOW TO MAKE DATA SETS ASSETS**



Inventory info generating, map work flow

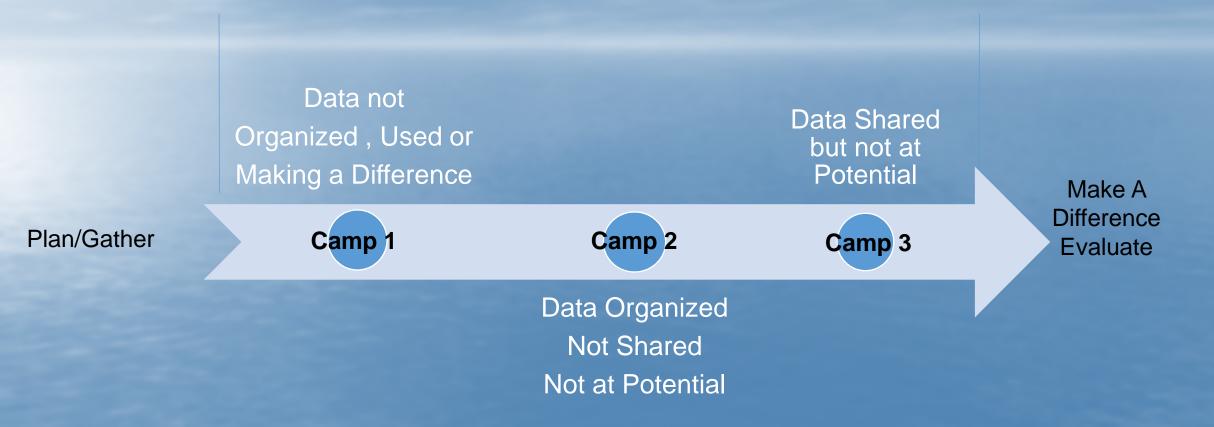
Manage Raw **Data to Verified** 

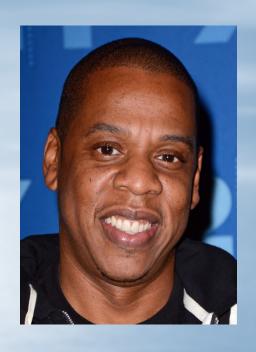


# About Reaw Data - Watershed Reports

River Watch is a statewide volunteer water quality-monitoring program operated by the non profit 501©3 Earth Force in cooperation with Colorado Parks and Wildlife (CPW). Our mission is to work with voluntary stewards to monitor water quality and other indicators of watershed ity data to educate citizens and inform decision makers about

## IS YOUR DATA AN ASSET?















THANK YOU
QUESTIONS

COMMENTS

Barb.horn@state.co.us

www.waterdatacollaborative.org